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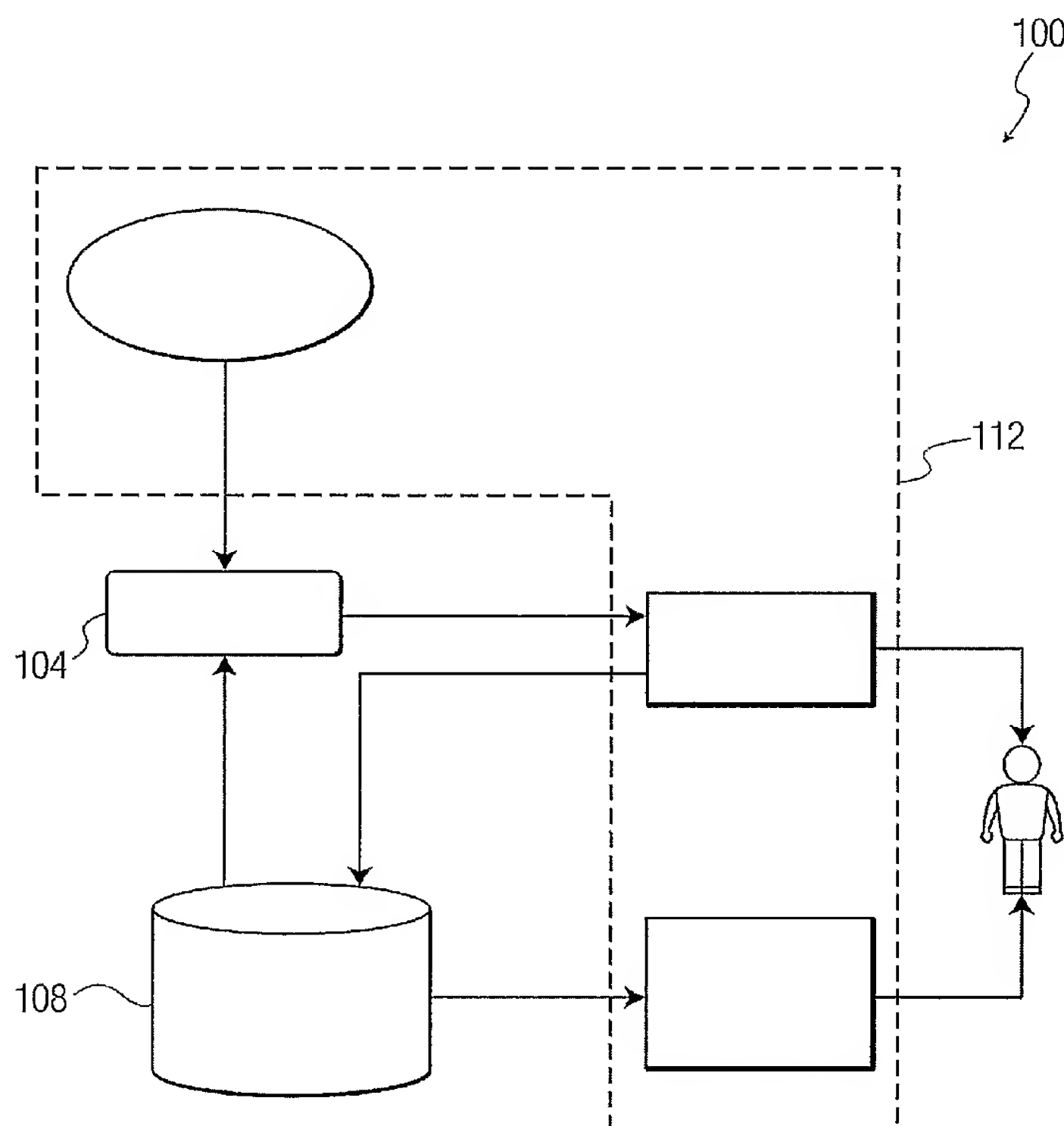
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*[Continued on next page]*

**(54) Title:** EXAMPLE-BASED DIAGNOSIS DECISION SUPPORT



**(57) Abstract:** A computer-aided diagnosis (CAD) technique matches an image of an undiagnosed tumor against respective images of a group of tumors of known pathology, either malignant or benign(104, 208). Either a database of malignant tumor images is designated, or a database of benign tumors is designated (112). The closest group of reference tumor images in terms of similarity is found from the designated database (228). Similarity between the test image and the group of reference images is determined by the smallest Mahalanobis distance between the test and reference images (216). The group is altered by a genetic algorithm to include different images that are then tested for distance, this process being iteratively executed subject to a stopping criterion (216, 220, 224, 228).



FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT,*

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- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for all designations*

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